JAPAN

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JIS B 6595 (1991) (English): Rotary clippers -- Test and inspection methods

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The citizens of a nation must honor the laws of the land.

Fukuzawa Yukichi

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JIS

JAPANESE INDUSTRIAL STANDARD

Rotary clippers — Test and inspection methods

JIS B 6595–1991

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In the event of any doubt arising,
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JAPANESE INDUSTRIAL STANDARD J I S

Rotary clippers — Test and inspection methods

B 6595-1991

1. Scope

This Japanese Industrial Standard specifies the test methods relating to the functions, running performances and rigidity as well as the inspection methods of static accuracy and machining accuracy of the rotary clippers of which the knife mounting face is 1100 mm or over to 3350 mm or less in length.

Remarks 1. The rotary clipper means the machine which cuts the veneer into a definite size by a tool mounted on a rotating horizontal cylinder (See JIS B 0114).

2. The applicable standards to this Standard are as given in the following:

JIS B 0114 Glossary of terms for wood working machinery

JIS B 6507 General code of safety for wood working machinery

JIS B 6521 Methods of measurement for noise emitted by wood working machinery

3. Units and numerical values given in { } in this Standard are in accordance with the conventional units, and are appended for informative reference.

2. Function test methods

The function tests of the rotary clippers shall be in accordance with Table 1.

Table 1. Function test

No.	Test item	Test method
1	Electrical equipment	Before and after the running of the test, examine the insulating conditions once each.
2	Start, stop and running operation of knife roll	At an appropriate rotational speed of knife roll, carry out 10 times the start and stop repeatedly, and examine the smoothness and the reliability of actions.
3	Changing operation of rotational speed of knife roll	Change the speed on every indicated rotational knife roll speed, or for variable speed type, on the minimum, intermediate and maximum rotational speeds, and examine the smoothness of actions and the reliability of indications of the control unit.
4	Start, stop and running operation of feeding device	At an appropriate feed rate, carry out 10 times the start and stop repeatedly, and examine the smoothness and the reliability of actions.
5	Changing operation of feed rate	Change the speed on every indicated feed rates, or for variable speed type, on the minimum, intermediate and maximum speed rates, and examine the smoothness of actions and the reliability of indications of the control unit.
6	Mounting and dismounting of knife	Examine the smoothness and the reliability of the mounting and dismounting of the knife and the clamping of the clamp screw.
7	Automatic or manual operation of cutting device	Examine the smoothness and the reliability of automatic or manual actions of the cutting device. In addition, examine the smoothness and the reliability of automatic and manual change operations.
8	Safety device	Examine the reliability of safety function for workers and protective function for machine (See JIS B 6507).
9	Lubrication device	Examine the reliability of functions such as oil seal and proper lubricant distribution.
10	Pneumatic device	Examine the reliability of functions such as airtightness and pressure regulation.
11	Accessories	Examine the reliability of functions.

Remarks: For the rotary clipper which is not provided with the said function, the test item corresponding to this in Table 1 shall be omitted.

3. Running test methods

3.1 No-load running test Rotate the knife roll and anvil roll, continue running for 30 to 60 minutes, measure the consumed electric power and noise, after the bearing temperatures have stabilized, record the respective items specified in the Recording Format 1 of Table 2, and observe that there is no abnormal vibration by the sense of touch.

The measurement of noise shall be in accordance with JIS B 6521.

Table 2. Recording Format 1

No.	Time of measurement o'clock minute	Rotational speed of knife roll r/min {rpm}		Bearing temperatures °C				Working air pressure MPa {kgf/cm²}	Electric power consumption			Noise dB (A)	Room temperature °C	Remarks
				Knife roll		Anvil roll								
		Indicated	Measured	Left	Right	Left	Right		Voltage V	Amperage A	Input power kW			

Remarks 1. For that is provided with the variable speed device of the knife roll and anvil roll, the rotational speeds under at least two conditions, including the maximum peripheral speed, shall be tested.

2. The conditions of noise measurement shall be recorded in the remarks column.

3.2 Load running test Cut a test specimen, measure the consumed electric power and noise, record the respective items specified in the Recording Format 2 of Table 3, and observe that there is no abnormal vibration and the conditions of cut sections by the sense of touch.

In the measurement of the consumed electric power, carry out the test by changing the thickness of test specimen at a definite feed rate or by changing the feed rate at a definite thickness of test specimen.

The measurement of noise shall be in accordance with JIS B 6521.

Table 3. Recording Format 2

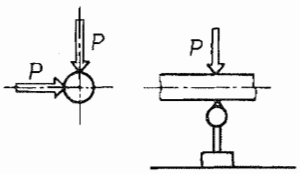
No.	Test specimen					Knife						Anvil roll				Cutting conditions		Working air pressure	Electric power consumption				Noise	Humidity	Remarks
	Dimension			Species of tree	Moisture content	Dimensions			Tool angle	Material of tool edge	Knife mounting condition	Dimensions		Material	Hardness	Feed rate	Settled cutting length		Voltage	Amperage	Inpur power				
	Length	Width	Thickness			Length	Width	Thickness				Length	Diameter								No-load	Load			
	mm	mm	mm		%	mm	mm	mm				mm	mm			m/min	mm	MPa {kgf/cm²}	V	A	P_0 kW	P_1 kW	dB (A)	%	

Remarks: The conditions of noise measurement shall be recorded in the remarks column.

4. Rigidity test method

The rigidity test of the rotary clipper shall be in accordance with Table 4.

Table 4. Rigidity test

No.	Test item	Measuring method	Diagram for measuring method
1	Flexural rigidity of knife roll	Apply a fixed test indicator to the centre of the knife roll, load (P) at right angles to the knife roll ([1]), and measure the deflection of the knife roll. This measurement shall be carried out applying the load in two directions at right angles to each other.	

Note ([1]) The loading position should be at or near the centre of the knife roll as close as possible, and the distance from the fixed end of the knife roll shall be recorded.

Remarks 1. The rigidity test of the machines of the same design shall be represented by the test results which have been obtained from a representative machine, and for others may be omitted.

2. The magnitude of the load (P) shall be the value recommended by the manufacturer, and its value shall be recorded.

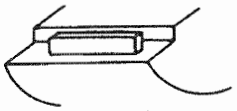
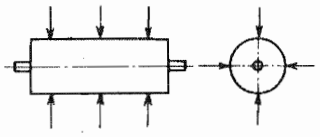
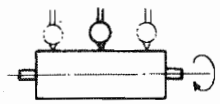
3. This measurement shall be carried out after the bearing temperatures have been stabilized, rotating the knife roll.

5. Static accuracy inspection methods

The static accuracy inspections of the rotary clipper shall be in accordance with Table 5.

Table 5. Static accuracy inspections

Unit: mm

No.	Inspection item	Measuring method	Diagram for measuring method	Permissible error
1	Straightness of knife mounting face	Place a straightedge in longitudinal direction on the knife mounting face ([2]), measure clearances with a feeler gauge, and regard the maximum value thereof as the measured value.		Per 1000 0.03
2	Cylindricity of anvil roll	Between the maximum differences of the anvil roll diameters which have been measured respectively in two planes at right angles to each other, including the axis, regard the larger value as the measured value. These measuring places shall be at least three places or more including centre and both ends ([3]) of the avil roll.		0.10
3	Swing of anvil roll	Apply a test indicator to the outer peripheral surface of the anvil roll, rotate the anvil roll manually, and regard the maximum difference of the readings of the test indicator during rotation as the measured value. This measurement shall be carried out on the centre and both ends ([3]) of the anvil roll.		0.10

Notes ([2]) This measurement shall be carried out on the horizontal face and vertical face. However, the vertical face may not be measured depending on the construction.

([3]) The position of shear drop shall be avoided from measurement.

Remarks: For the rotary clipper which is not provided with the said function, the inspection item corresponding to this in Table 5 shall be omitted.

6. Machining accuracy inspection method

The machining accuracy inspection of the rotary clipper shall be in accordance with Table 6.

Table 6. Machining accuracy inspection

Unit: mm

No.	Inspection item	Measuring method	Permissible error
1	Deviation of automatic cut lengths	Feed a test specimen (4) at a definite speed, cut automatically at least 10 sheets or more, measure cut-lengths respectively with a steel tape measure, and regard the maximum difference thereof as the measured value.	$5 + \frac{\text{Feed length/min}}{6000}$

Note (4) The test specimen shall be a continuous veneer which is of fine quality free from cracks and the like (raw veneer may also be applied).

Reference Standards:

JIS B 6501-Test Code for Performance and Accuracy of Wood Working Machinery

JIS Z 8203-SI units and the Use of Their Multiples and of Certain Other Units

B 6595-1991
Edition 1

Japanese Text

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